

**Lithographic Apparatus, Device Manufacturing Method,  
and Device Manufactured Thereby.**

**ABSTRACT**

Pre-cleaning or *in situ* cleaning of optical components for use in a lithographic projection apparatus can be carried out by irradiating the optical component with microwave and/or infra-red radiation, preferably infra-red radiation having a wavelength or a range of wavelengths in the range of from  $1000\text{cm}^{-1}$  to  $4600\text{cm}^{-1}$ . This technique may be suitable for cleaning a mask. By monitoring the absorption of microwave and/or infra-red radiation directed at a contaminated optical component, the degree of contamination of said component can be qualified. This method may also be suitable for reducing the partial pressure of water in EUV apparatus.